Radio Control House
Frankfort Coast Guard Station
Frankfort
Benzie County
Michigan

HAER No. MI-122-A

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Great Lakes Systems Office
1709 Jackson Street
Omaha, Nebraska 68102-2571

HISTORIC AMERICAN ENGINEERING RECORD
RADIO CONTROL HOUSE (Beacon House)

I. INTRODUCTION

Location:	Frankfort Coast Guard Station, Second Street at ship channel between Lake Michigan and Lake Betsie, Frankfort, Benzie County, Michigan
Quad:	Frankfort, Mich.
UTM:	16/4941980/559880
Construction Date:	1932
Present Owner:	United States Coast Guard
Present Use:	Electrical service to beacon lights. Scheduled for demolition.
Significance:	An economically constructed service building associated with expanding technology at Coast Guard and Lifesaving Service stations in the Great Lakes region in the first half of the twentieth century. In an unusual combination of functions, it housed a two-vehicle garage and an electrical generator (later, electrical panels) for radio towers, fog signals, and beacons on the site from 1932 to date. In 1994, determined eligible for listing on the National Register of Historic Places.
Project Information:	James C. Massey, Architectural Historian; Shirley Maxwell, Historian, Massey Maxwell Associates, December 1996. Prepared as mitigative documentation under a Memorandum of Agreement among the U.S. Coast Guard, the Michigan State Historic Preservation Officer, and the National Park Service.

II. HISTORY

The Frankfort Coast Guard Station was first established in 1887[1] on the south side of the channel between Lake Michigan and Lake Betsie (originally, *Lac au Bec Scie*) southwest of the town of Frankfort, Michigan. In 1929 it was decided to move the station to the north side of the channel. The move was completed in 1935.

The history of the site up to that time is outlined in a report dated April 7, 1939 (USCG Land Records document in the possession of the Office of the Coast Guard Historian, Washington, D.C.):

> The original sites of the Frankfort station were acquired by deeds dated November 1883 and June 3, 1898, from Henry Day. These sites were on the south side of the harbor entrance at Frankfort.
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> In 1929 it was proposed locating the station on the north side of the harbor entrance. Negotiations were begun

[1]Frederick Stonehouse, Wreck Ashore: the United States Life-Saving Service on the Great Lakes (Duluth, Minn.: Lake Superior Port Cities Inc., 1994), p. 61.

with the Ann Arbor Railroad Company, the owner of most of the land in that vicinity, to acquire a suitable site.

It was agreed that the Railroad would donate a site containing one-half acre if the United States would abandon the site used as the station, the Railroad having conveyed by deed dated January 25, 1929, and the Declaration of Abandonment of the old site was executed on March 13,, 1929. A lease was thereupon entered into with the company on January 28, 1929, for the right to occupy the old site until funds became available to erect a new station on the new site. Before building the new station, it was decided that it would be more advantageous to all concerned if there was another exchange of sites made. By deed dated March 31, 1934, the Railroad conveyed a site containing 2.7 acres in consideration of the abandonment to them of the one-half acre site conveyed in 1929. This was done by a Declaration of Abandonment executed and recorded simultaneously with the conveyance of the new site.

The construction of the new station and the erection of the Radio Control House are traced in the annual reports of the Secretary of Commerce for the Bureau of Light Houses. Citing "extensive work underway at the station by the Corps of Engineers

and Light House Bureau re residence, boat house, erection and moving of towers, changes to lighting. . .," the June 1932 report notes that "footings [were] placed for Power Watch House" that year. The report also refers to an "old dwelling" moved from Chicago to the new station. The June 1933 Annual Report notes, among other accomplishments of the year, "The power house and garage on shore have been completed."

Intended as a support building for aids to navigation on Lake Michigan, the Radio Control House (which, in recent years, has been called the Beacon House) was started in the second half of 1932,[2] using drawings approved on May 11 of that year[3] and completed before the annual report for 1933 was issued in June. The building has been little altered in the intervening 64 years. Although the architect is not identified on the drawings, the delineator's name is given as L. O. Struble. Because of the

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[2]Bureau of Lighthouses Annual Report of the Secretary of Commerce, June 1933, p. 104.

[3]Drawing No. R&H 23080. "Frankfort, Mich. Fog Signal Power and Watch House with Attached Garage." Approved by C.H. Hubbard, Supt., May 11, 1932. Drawn by L. O. Struble. Office of Supt. of Lighthouses, 12th Dist., Milwaukee, Wis. Drawing located in National Archives, Architectural and Cartographic Branch, College Park, Maryland. Drawing was returned by Bureau with Form 80 approved June 4, 1932. Revised September 30, 1932, November 4, 1932, and December 2, 1944. Frankfort Coast Guard Station has in its files a blueprint copy of the same drawing without the subsequent revisions, dated May 11, 1932, and bearing the original drawing number, 32088-A.

simplicity of the building, it is possible that in this case the delineator was also the designer. There is no indication that the building followed a standardized Coast Guard or Light House Service design.

The Radio Control Building was situated in a separately fenced area, 281' wide and 80' deep, in the northwest corner of the Coast Guard station, an area identified on the October 30, 1934, "Frankfort Station Plot Plan" (Dwg. No. R&H 23079) as property of the Light House Service. Its separateness from the rest of the station reflects the fact that the Light House Service was not fully integrated into the modern Coast Guard until the Presidential Reorganization Act of 1939.[4]

In its intended role as a "Fog Signal Power and Watch House" (see the 1932 construction drawing), the building contained an engine for generating electricity, presumably powering both lights and radio. There is no indication in any of the written or graphic documents examined of how the generator itself was powered. The 1934 plot plan,[5] on which the building is

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[4]F. Ross Holland, America's Lighthouses: Their Illustrated History Since 1716. (Brattleboro: The Stephen Greene Press, 1972), p. 38.

[5]Frankfort Station Plot Plan. Dwg. No. R&H 23079. Oct. 30, 1934.

designated as "Garage and Radio Beacon," shows a radio mast a few feet west of the building, with a 160' antenna line running southwest to a second radio mast. A note of December 2, 1944, on the 1932 architectural plan also indicates that overhead electric power was brought in to the site on or about that date. The drawing was revised to show the service entrance and panel boxes.

Now disused and in deteriorating condition, the building has served variously as a radio control building, as housing for electrical service for range light and breakwater light, and, most recently, for storage of a few miscellaneous objects such as outboard motors. In September 1996 the only electricity available in the building was for the North Breakwater Light and the North Pierhead Range Light. The Radio Control Building is scheduled for demolition by the Coast Guard.[6] Because of its early association with the Frankfort Coast Guard Station, it has been determined eligible for listing in the National Register of

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[6]A memorandum of 8 November 1995 from the Frankfort Station Officer in Charge to Commanding Officer, Coast Guard Civil Engineering Unit Cleveland notes that the building is without heat or electricity and is in deteriorated and unsafe condition. Alternative functions considered and rejected as unsafe, unworkable, unnecessary, or prohibitively expensive include storage, recreation, classroom, and garage use.

Historic Places as a contributing component of the Coast Guard Station complex.[7]

III. DESCRIPTION

A. SUMMARY DESCRIPTION

The Radio Control House is a one-story brick-veneer building, four bays wide and two bays deep, with a basement at the west end only. It has a flat reinforced-concrete roof. The south-facing structure is 46' wide x 24' deep and is comprised of two discrete sections of equal size, separated by an interior wall of concrete block. At the east end is a two-vehicle garage with overhead paneled doors. The building has a steel H-column and I-beam structure supporting the building roof and the engine room floor, running east to west at the center of the building. A concrete drive with two ramps is in front of the building. (See Photos No. MI-122-A-2, MI-122-A-3, and MI-122-A-4.)

B. EXTERIOR

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[7]Patrick Andrus (for Keeper of the National Register), Determination of Eligibility Notification, National Register of Historic Places, 4/20/95. (Signed by Patrick Andrus for Keeper of the National Register). Kathryn B. Eckert, State Historic Preservation Officer, Michigan, to M.E. Cuts, Lt. Commander, Planning and Management Section, U.S. Coast Guard.

The exterior of the building is of variegated shades of red, textured-brick veneer over a wood frame resting on an exposed grade-level reinforced-concrete foundation. The only decoration is a three-course brick section between the windows and the coping of alternating sets of three stretchers and three vertical soldiers. Below the concrete coping a single brick course projects slightly. Over the windows and doors are decorative lintels of vertical soldier course brick. (See Photos No. MI-122-A-2, MI-122-A-3, and MI-122-A-4.)

The single front door, a modern metal door which opens to an interior vestibule, is in the west half of the building. (See Photo No. MI-122-A-2.) In the east, or garage, half of the front wall are two overhead paneled wood doors with glass in the center panels.

The two-bay section at the west end of the front contains one set of original, paired, metal-sash windows west of the front door and a single metal-sash window east of the door. Each single window is 2'3" wide x 3'3" high single-hung 4-light metal sash designed to pivot inward at the top.

The flat, built-up composition roof is on a reinforced-concrete slab. A brick central chimney located in the concrete-

block wall between the two parts of the building serves the basement furnace. There are three metal roof ventilators, one serving the engine room, one a toilet, and one the garage. A concrete 5" coping runs around the edge of the roof, above a course of projecting vertical header bricks.

The west wall of the building contains two pairs of steel windows and a closed-in opening for the radio antenna. (See Photo No. MI-122-A-4.) The rear side has two pairs of steel windows, one set in each portion of the building. The east wall has two pairs of steel windows. (See Photos No. MI-122-A-3 and MI-122-A-5.) Smaller steel windows light the basement on the west and rear walls.

C. INTERIOR

The interior of the western section of the building is in two parts. The front portion contains an entrance vestibule, basement stairs, and a partitioned toilet room. (See Photo No. MI-122-A-6.) The remainder is the original engine room. (See Photo No. MI-122-A-7.) The plaster-finished ceiling is under steel bar joists and is topped with the concrete roof. False boxed ceiling beams of unpainted wood are of recent construction and are related to an abandoned attempt to convert the building to recreational use. A 12"-diameter cylindrical sheet-metal

cylinder protrudes through the ceiling in the main room and is part of a roof ventilator operated by means of a metal chain pulley attached to a 10" iron weight.

The floor is of reinforced concrete, integrally cast with concrete beams at 26" o.c. in metal-pan construction. The beams are 8" deep and 6" wide. The floor is painted. Metal grilles over hot-air and return-air vents are in the floor near the door and on the north wall.

An array of modern electrical panel boxes is on the north wall. (See Photo No. MI-122-A-7.)

A small restroom with a single toilet and basin is inserted on the south wall of the west section behind the vestibule, directly in line with the front door and beside steep metal stairs leading to the basement. A small roof ventilator is in the ceiling. The vestibule has a metal door on the east to the garage.

Located at the eastern end of the building, the two-vehicle garage is in a single room. (See Photo No. MI-122-A-8.) The walls are plastered and painted. The ceiling is plaster-finished under the steel-bar joists supporting the reinforced-concrete

roof slab. It contains a sheet-metal cylinder and pulley ventilator identical to that in the west section. The floor is of reinforced-concrete as in the west section, except that it is laid on grade and is strengthened by reinforced-concrete grade beams. The walls are on a pile foundation. There are two floor drains and a heat grille in the floor.

The basement is under the west section only and is reached by way of the original metal stairs from the entrance vestibule. It contains three rooms. The southeast room, extending from the front to the back of the building, contains the staircase on the southeast wall and, beside it, an oil-fired furnace. A coal chute on the south wall is no longer in use. The chute was fed through a circular metal hatch in an aggregate concrete pad next to the front wall of the building. The other two rooms on the west side are vacant.

The walls of the basement are in 12" concrete block with reinforced-concrete footings. There are two small steel windows on the west side and one pair of steel windows on the north side. The floor is of reinforced concrete, and the ceiling (the engine room floor) is of concrete-pan construction.

D. SETTING

The Frankfort Coast Guard Station Radio Control House is in the far northwest corner of the Frankfort, Michigan, Coast Guard station, on the north side of the channel between Lake Betsie and Lake Michigan, at the south end of Second Street at the southwestern edge of the town of Frankfort, 280' from the channel to the south and 170' from Lake Michigan on the west side. (See Photo No. MI-122-A-1.) The 1934 plot plan (R&H 23079) shows the Radio Control House and the double dwelling to the east as a separately fenced property of the United States Light House Service 281' wide and 80' deep. It has now been integrated into the Coast Guard Station. To the north, a modern condominium complex nearly touches the rear wall of the Radio Control House and towers above it. Across the channel to the south are a group of oil tanks and the remains of an abandoned automobile-ferry operation are on the shoreline. Mature birch trees and scrub growth flourish on the sand dunes immediately west of the building extending to the Lake Michigan shore. A lawn extends to the channel in front of the building. To the east is a fenced yard for a double quarters building. At the east end of the property is the present Coast Guard Station building containing offices, living quarters and boat launching slips. Various smaller utility buildings are nearby. A concrete drive from Second Street extends west across the front of the building, with concrete ramps leading to the front door and the garage door. A

circular, iron coal-loading hatch is built into a concrete pad on the west side of the front door.

Four lights mark the channel. The North and South Breakwater Lights are located at the end of stone breakwaters. and the North and South Pierhead Range Lights mark the immediate entrance to the channel into Lake Betsie. The north side lights are powered from the Coast Guard Station, the south lights are separately powered.

E. FUNCTION

The structure is noted on the original construction drawing (Drawing No. R&H 23080, 1932) as "Fog Signal Power and Watch House with Attached Garage" and on a 1934 plot plan as "Garage and Radio Beacon" (Drawing No. R&H 23079, 1934). The west room is designated on the 1932 construction drawing as "Engine Room," and the drawing shows the location of the antenna system going through the west wall. No documentary material has been located in Coast Guard files or in the National Archives to describe the original engine, but it was presumably an electric generator to power the radio, the fog horn, and the North Pier Range Light, as well as the building itself. The 1934 plot plan shows electric poles and an overhead electric line extending from the radio control house southwest to the North Pierhead Range Light. The

plot plan also shows a radio mast a few feet west of the building with a 160' antenna line running southwest to a second radio mast. No additional written documentation has been located. The 1932 construction drawing contains a notation of revision of December 2, 1944, for the supply of main overhead electric power from the town of Frankfort. This is shown in the 1934 plot plan (Drawing No. R&H 23079), revised on December 1, 1944, to show the service entering the property along Second Street. It included 440-volt three-phase service as well as 110-220-volt service. The service entered the building at the rear side, feeding an array of panel boxes in the engine room. By this time there was a north breakwater light and this was supplied with 440-volt service underground and underwater. From the building underground wires now ran to the North Pierhead Range Light. Power was also supplied from this service to the adjacent dwelling and later to the balance of the facility at both 110 and 220 volts. In addition, the main Coast Guard building also received direct main service at 110 volts from the city system. Inside the radio Control House on the rear wall is an array of panel boxes for the several voltage services and for their distribution to the lights and building facilities. The current panel boxes all appear to be modern. At an earlier point there was a separate fuse box for the lights within the Radio Control House itself. At present there is no internal electrical service

in the building. The original radio antenna system was replaced at an unknown date by a new system shown on a 1994 site plan (Drawing No. 5582B). It indicates a mast located just beyond the west wall of the building running south and an antenna cable running due south to a radio transmitter midway to a second radio, a total distance of about 155'. This transmitter tower survives, although it does not show on the 1995 Frankfort Station Plot Plan (Drawing No. 0930934), which is based on the 1994 site plan. This indicates that the radio function of the building has ceased. (See Photo No. MI-122-A-1.) For detailed location of the four harbor lights, see USGS Quad, "Frankfort, Michigan," appended to this report.

IV, MODIFICATIONS

The Radio Control House was constructed in the second half of 1932 and has been little altered since then. Construction drawing No. RH 23080, "Frankfort Michigan, Fog Signal Power and Watch House with Attached Garage," notes revisions. Changes in the electrical supply and functions have already been noted above. The front door was replaced with a modern steel door at an unknown date. The current overhead garage doors replace the original swing-out doors with six-light sash in each door. (See Photo No. MI-122-A-2.) In the interior entrance vestibule, there

were originally a door and partition from the vestibule to the engine room to the west, both now removed. (See Photo No. MI-122-A-6.) No evidence, either physical or documentary, has been located for the original engine. The engine room is now used exclusively for electrical panel boxes and controls, and false wood beams have been added below the beams in an abandoned attempt to convert this building to recreational use. (See Photo No. MI-122-A-7.) The restroom fixtures have been replaced with modern ones. The original garage openings were filled with two outward-swinging doors each, containing one six-light sash each.[8] The date of the present overhead doors is not known.

The original basement configuration was one large L-shaped room with a small room partitioned off in the southwest corner for coal storage. Originally the basement was in two rooms: a workroom, also containing the coal furnace; and a coal room, partitioned off in the southwest corner. The original coal furnace has been replaced by a modern oil furnace. The coal chute appears to have been added shortly after the construction of the original building; it is no longer used. Installation and changes to electrical service have been discussed under "Function," above.

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[8]Dwg. R&H 23080.

V. SOURCES OF INFORMATION

Sources consulted for this report include National Archives and Records Service, Washington, D.C.: RG 26, USCG Correspondence File and Land Records; Annual Reports of the Secretary of Congress, Bureau of Light Houses; Architectural and Cartographic Branch; and Still Pictures Branch, College Park Maryland; Bureau of Michigan History, State Historic Preservation Office; U. S. Coast Guard Historian's Office, Washington, D.C.; U. S. Coast Guard, CEU, Cleveland, Ohio; and site files, Frankfort Coast Guard Station.

ARCHITECTURAL DRAWINGS AND PLOT PLANS:

National Archives, Architectural and Cartographic Branch

1. Fog Signal Power and Watch House with Attached Garage, Frankfort, Mich. Drawing No. R&H 23080. May 11, 1932. Contains south and east elevations, 1st Floor and basement plans, detail of steel work, partial section on details. Drawn by L.O. Struble. Approved by C. H. Hubbard, Supt., 12th Dist. "Returned by Bureau with Form 80 approved June 4, 1932." Revised Sept. 30, 1932, Nov. 4, 1932, and Dec. 2, 1944. (A blueprint copy of an earlier version of this drawing, numbered 32088-A and without subsequent revisions of steel and

construction details, is in the site file at Frankfort Coast Guard Station, Frankfort, Michigan.)

2. Plot Plan, Frankfort Station, October 30, 1934. Dwg. No. R&H 23079. Revised 6/24/43, 7/30/43, and 12/1/44.

USCG CEU, Cleveland, Ohio

1. Plot Plan, Frankfort Station, undated, ca. 1935. Dwg. No. R&H 23006. Shows overhead power line from garage to range light at north pierhead.

2. Frankfort Station Plot Plan, 10/26/95. Dwg. No. 09-30934.

3. Site Plan, Frankfort Station. 04/20/94. Dwg. No. 5582-B.

HISTORIC VIEWS

U.S. Coast Guard Headquarters, Historians Office, Washington, DC

General View. "Frankfort. Looking west from lookout tower. DKR. Aug. 9, 1936." 2 black-and-white photos taped together.

Frankfort L.B. 1934. Black and white; 2-1/2" x 4-1/2". Shows front of Radio Control House with skeleton tower at left and 2 masts at right.

Frankfort LB Sta. "North side of Powerhouse, looking South." Black and white; 6-1/2" x 8". Undated.

Frankfort LB Sta. "North side of Powerhouse, looking S.W." Black and white; 6-1/2" x 8". Undated.

8 mounted 2-1/2" x 2-1/2" black and white photos, undated (ca. 1944?), labeled "Frankfort Light & LB Station. Eight captions track installation of new radio tower.

BIBLIOGRAPHY

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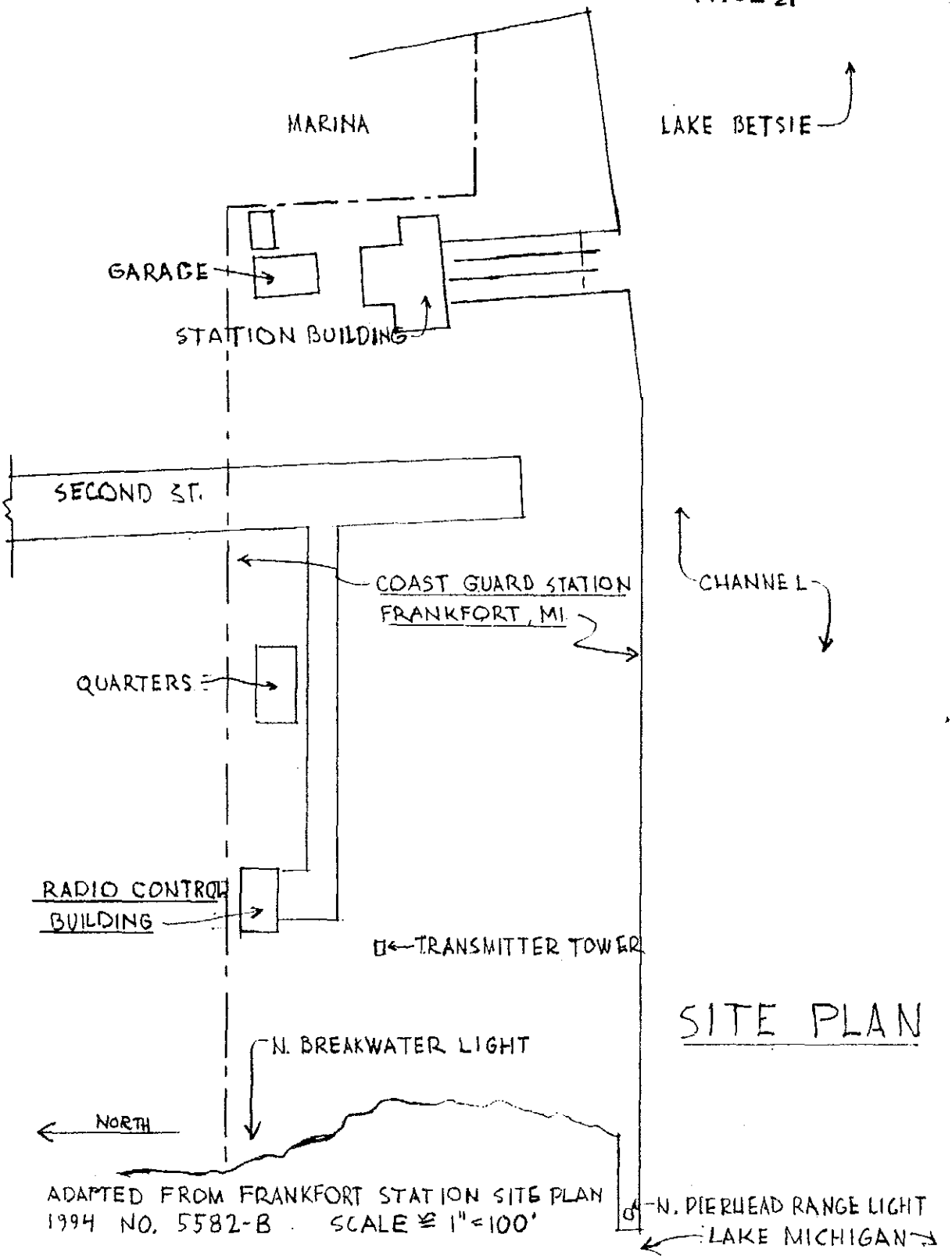
Martone, Camille M., Lauren McCroskey, and Sharon C. Park. Preserving Historic Lighthouses. Washington: U. S. Dept. of Interior, Preservation Assistance Division, 1990.

National Park Service. Inventory of Historic Light Stations. Washington: National Park Service, 1994. (Note: The inventory notes only the North Breakwater Light and the Beacon House, but not the other three lights or the other buildings at the Frankfort Station.)

Stonehouse, Frederick. Wreck Ashore: The United States Life-Saving Service on the Great Lakes. Duluth, Minn.: Lake Superior Port Cities, Inc., 1994.



SITE PLAN

ADAPTED FROM FRANKFORT STATION SITE PLAN
1994 NO. 5582-B SCALE ≅ 1"=100'